<u>WHAT IS CLAIMED IS</u>:

1. A method for halftoning an input image comprised of at least two input color components, wherein each input color component provides input intensity values for the color component at pixel locations in the image, comprising:

accessing at least two halftoning screens, wherein there is one screen for each color component, and wherein at least one of the screens generates halftone output having a lines per inch (LPI) that is at least approximately twenty percent different than the LPI of halftone output generated by one other screen;

separating the input image into the separate color components; and

applying the accessed screen for each color component to the input intensity values for the color component to produce the halftone output for the color component, wherein the combined halftone output for all the color components form the output pixels.

2. The method of claim 1, wherein the input image includes four color components.

3. The method of claim 2, wherein the halftone outputs generated by three of the screens have a same LPI and the halftone output generated by one screen has an LPI that is at least approximately 20% different than the LPI of the halftone outputs generated by the other three screens.

4. The method of claim 2, wherein the four color components comprise cyan (C), magenta (M), yellow (Y), and black (K).

5. The method of claim 4, wherein the halftone output generated by the screen for the black (K) color component has an LPI that is at least approximately

20% greater than the LPI of the halftone output generated by at least one of the other cyan (C), magenta (M), and yellow (Y) screens.

6. The method of claim 4, wherein the halftone output generated by one of the screens is rotated at a zero angle and the halftone outputs generated by two of the other screens are rotated in different directions at second and third angles greater than zero, and the halftone output generated with the greater LPI is rotated at a fourth angle, wherein the screens are rotated from the vertical axis.

7. The method of claim 6, wherein the fourth angle is approximately equal to zero.

8. The method of claim 6, wherein the fourth angle is approximately less than twenty degrees.

9. The method of claim 1, wherein the LPIs of the halftone outputs generated by at least two of the screens have a ratio of approximately 3:2 or 4:2 or the LPI of the halftone output generated by at least one screen is approximately an integer multiple of the LPI of the halftone output generated by at least one other screen.

10. The method of claim 9, wherein the LPI of the halftone output generated by at least one screen is approximately the integer multiple of the LPI of the halftone output generated by at least one other screen, and wherein the halftone output with the integer multiple LPI is rotated at approximately a 45 degree angle.

11. The method of claim 9, wherein the LPI of the halftone output generated by at least one screen is less than approximately 50% more than the LPI of the halftone output generated by at least one other screen, and wherein the halftone

output with the 50% greater LPI is rotated at approximately an angle less than approximately 30 degrees.

12. The method of claim 1, wherein the screens comprise threshold matrices including threshold intensity values.

13. The method of claim 12, wherein applying the screen to the input intensity values for each color component comprises:

comparing the input intensity value to a corresponding threshold intensity value in the threshold matrix for the color component;

outputting a first output intensity value if the input intensity value is less than the corresponding threshold intensity value; and

outputting a second output intensity value if the input intensity value is greater than or equal to the corresponding threshold intensity value.

14. The method of claim 13, wherein the first and second output intensity values are capable of indicating zero intensity or full intensity for the color component.

15. The method of claim 12, wherein applying the screens to the intensity values for each color component comprises:

comparing the input intensity value to a corresponding threshold intensity value in the threshold matrix for the color component; and

outputting one of at least three output intensity values in a multi-tone output device which is capable of rendering based on an outcome of comparing the input intensity value to the corresponding threshold intensity value.

16. The method of claim 15, wherein the image is separated into four color components.

17. A system for halftoning an input image comprised of at least two input color components, wherein each input color component provides input intensity values for the color component at pixel locations in the image, comprising:

a memory storing at least two halftoning screens, wherein there is one screen for each color component, and wherein at least one of the screens generates halftone output having a lines per inch (LPI) that is at least approximately twenty percent different than the LPI of halftone output generated by one other screen;

means for separating the input image into the separate color components; and

means for applying the screen for each color component to the input intensity values for the color component to produce the halftone output for the color component, wherein the combined halftone output for all the color components form the output pixels.

18. The system of claim 17, wherein the input image includes four color components.

19. The system of claim 18, wherein the halftone outputs generated by three of the screens have a same LPI and the halftone output generated by one screen has an LPI that is at least approximately 20% different than the LPI of the halftone outputs generated by the other three screens.

20. The system of claim 18, wherein the four color components comprise cyan (C), magenta (M), yellow (Y), and black (K).

21. The system of claim 20, wherein the halftone output generated by the screen for the black (K) color component has an LPI that is at least approximately 20% greater than the LPI of the halftone output generated by at least one of the other cyan (C), magenta (M), and yellow (Y) screens.

22. The system of claim 20, wherein the halftone output generated by one of the screens is rotated at a zero angle and the halftone outputs generated by two of the other screens are rotated in different directions at second and third angles greater than zero, and the halftone output generated with the greater LPI is rotated at a fourth angle, wherein the screens are rotated from the vertical axis.

23. The system of claim 22, wherein the fourth angle is approximately equal to zero.

24. The system of claim 22, wherein the fourth angle is approximately less than twenty degrees.

25. The system of claim 17, wherein the LPIs of the halftone outputs generated by at least two of the screens have a ratio of approximately 3:2 or 4:2 or the LPI of the halftone output generated by at least one screen is approximately an integer multiple of the LPI of the halftone output generated by at least one other screen.

26. The system of claim 25, wherein the LPI of the halftone output generated by at least one screen is approximately the integer multiple of the LPI of the halftone output generated by at least one other screen, and wherein the halftone output with the integer multiple LPI is rotated at approximately a 45 degree angle.

27. The system of claim 25, wherein the LPI of the halftone output generated by at least one screen is less than approximately 50% more than the LPI of the halftone output generated by at least one other screen, and wherein the halftone output with the 50% greater LPI is rotated at approximately an angle less than approximately 30 degrees.

28. The system of claim 17, wherein the screens comprise threshold matrices including threshold intensity values.

29. The system of claim 28, wherein the means for applying the screen to the input intensity values for each color component performs:

comparing the input intensity value to a corresponding threshold intensity value in the threshold matrix for the color component;

outputting a first output intensity value if the input intensity value is less than the corresponding threshold intensity value; and

outputting a second output intensity value if the input intensity value is greater than or equal to the corresponding threshold intensity value.

30. The system of claim 29, wherein the first and second output intensity values are capable of indicating zero intensity or full intensity for the color component.

31. The system of claim 28, wherein the means for applying the screens to the intensity values for each color component performs:

comparing the input intensity value to a corresponding threshold intensity value in the threshold matrix for the color component; and

outputting one of at least three output intensity values in a multi-tone output device which is capable of rendering based on an outcome of comparing the input intensity value to the corresponding threshold intensity value.

32. The system of claim 17, wherein the image is separated into four color components.

33. An article of manufacture including logic for halftoning an input image comprised of at least two input color components, wherein each input color component provides input intensity values for the color component at pixel locations in the image, and wherein the program comprises code embedded, wherein the logic halftones the input image by:

accessing at least two halftoning screens, wherein there is one screen for each color component, and wherein at least one of the screens generates halftone output having a lines per inch (LPI) that is at least approximately twenty percent different than the LPI of halftone output generated by one other screen;

separating the input image into the separate color components; and

applying the accessed screen for each color component to the input intensity values for the color component to produce the halftone output for the color component, wherein the combined halftone output for all the color components form the output pixels.

34. The article of manufacture of claim 33, wherein the input image includes four color components.

35. The article of manufacture of claim 34, wherein the halftone outputs generated by three of the screens have a same LPI and the halftone output generated

by one screen has an LPI that is at least approximately 20% different than the LPI of the halftone outputs generated by the other three screens.

36. The article of manufacture of claim 34, wherein the four color components comprise cyan (C), magenta (M), yellow (Y), and black (K).

37. The article of manufacture of claim 36, wherein the halftone output generated by the screen for the black (K) color component has an LPI that is at least approximately 20% greater than the LPI of the halftone output generated by at least one of the other cyan (C), magenta (M), and yellow (Y) screens.

38. The article of manufacture of claim 36, wherein the halftone output generated by one of the screens is rotated at a zero angle and the halftone outputs generated by two of the other screens are rotated in different directions at second and third angles greater than zero, and the halftone output generated with the greater LPI is rotated at a fourth angle, wherein the screens are rotated from the vertical axis.

39. The article of manufacture of claim 38, wherein the fourth angle is approximately equal to zero.

40. The article of manufacture of claim 38, wherein the fourth angle is approximately less than twenty degrees.

41. The article of manufacture of claim 33, wherein the LPIs of the halftone outputs generated by at least two of the screens have a ratio of approximately 3:2 or 4:2 or the LPI of the halftone output generated by at least one screen is approximately an integer multiple of the LPI of the halftone output generated by at least one other screen.

42. The article of manufacture of claim 41, wherein the LPI of the halftone output generated by at least one screen is approximately the integer multiple of the LPI of the halftone output generated by at least one other screen, and wherein the halftone output with the integer multiple LPI is rotated at approximately a 45 degree angle.

43. The article of manufacture of claim 41, wherein the LPI of the halftone output generated by at least one screen is less than approximately 50% more than the LPI of the halftone output generated by at least one other screen, and wherein the halftone output with the 50% greater LPI is rotated at approximately an angle less than approximately 30 degrees.

44. The article of manufacture of claim 33, wherein the screens comprise threshold matrices including threshold intensity values.

45. The article of manufacture of claim 44, wherein applying the screen to the input intensity values for each color component comprises:

comparing the input intensity value to a corresponding threshold intensity value in the threshold matrix for the color component;

outputting a first output intensity value if the input intensity value is less than the corresponding threshold intensity value; and

outputting a second output intensity value if the input intensity value is greater than or equal to the corresponding threshold intensity value.

46. The article of manufacture of claim 45, wherein the first and second output intensity values are capable of indicating zero intensity or full intensity for the color component.

47. The article of manufacture of claim 44, wherein applying the screens to the intensity values for each color component comprises:

comparing the input intensity value to a corresponding threshold intensity value in the threshold matrix for the color component; and

outputting one of at least three output intensity values in a multi-tone output device which is capable of rendering based on an outcome of comparing the input intensity value to the corresponding threshold intensity value.

48. The article of manufacture of claim 47, wherein the image is separated into four color components.

49. The article of manufacture of claim 33, wherein the logic is implemented as code in a computer readable medium accessible to a processor that executes the code.

50. The article of manufacture of claim 33, wherein the logic is implemented as circuitry within an integrated circuit chip.